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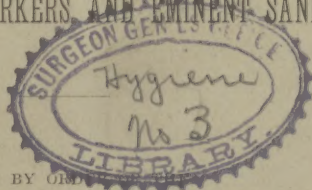
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State Boards of Health,

THEIR OBJECT AND USE, ETC.

EXTRACTS, SHOWING THE

VIEWS OF PRACTICAL WORKERS AND EMINENT SANITARIANS.



ISSUED BY ORDER

INDIANA STATE BOARD OF HEALTH.


THAD. M. STEVENS, M. D.,

Secretary and Executive Officer.

INDIANAPOLIS:

WM. B. BURFORD, PRINTER, LITHOGRAPHER AND BINDER.

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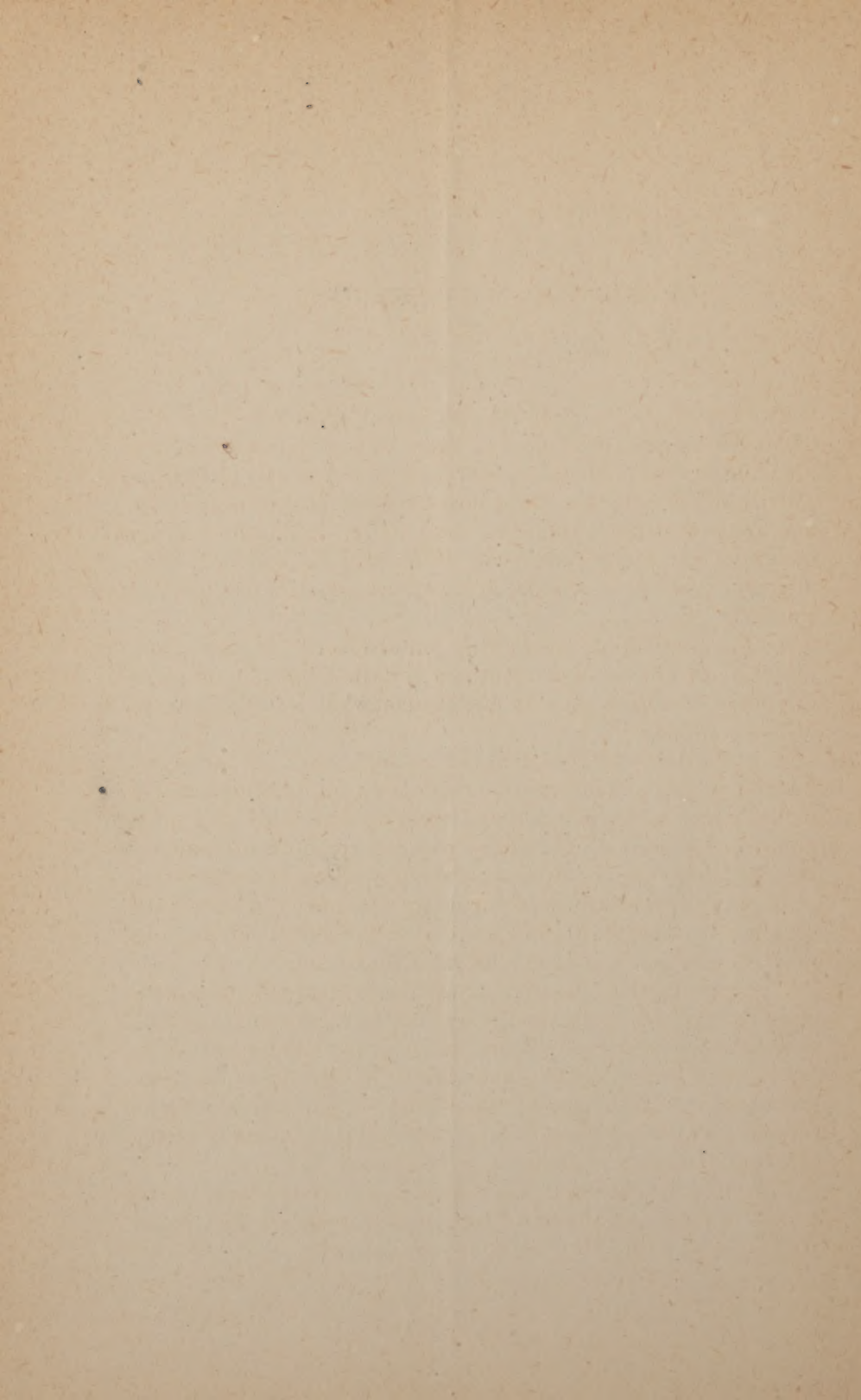
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OPINIONS OF SANITARIANS.

The first State Board of Health in the United States was that of Massachusetts, established in 1869. Since that date, twenty-six States have established health organizations. By an act, approved March 7, 1881, a State Board was established in Indiana, and since that date, there has been fully organized in every county of the State, except one, a County Health Board; also, city and town boards in each incorporated city and town of the State.

Such organization necessarily entails some expense, and places upon physicians and others certain duties, for the performance of which they do not receive what would appear to be adequate pay.

It is the duty of those engaged in such work, or taking an interest therein, to inform those who seek information relative to the value of such work, and to show the need and good policy of keeping up the added expense to the State and increased labor that devolves upon the physicians and others.

We here present the views of many who have for years been engaged in such work, and give, also, the recorded result, so that all may easily judge of its value and need.

The introduction of any new system is generally met with more or less opposition, and it was not to be expected that the establishment of a State Board of Health would be an exception. It is gratifying to know that this opposition has been less than was anticipated. The cause of opposition may be said to be founded on a misapprehension or ignorance of the object of the law and the aims of the Board.

It may be well to state that the chief aim of the law is, first, to collect facts and then to disseminate correct sanitary infor-

mation among the people. Whatever tends to increase the knowledge of the medical profession, tends to increase the safety and health of the people. It is due the medical profession to say that its members have generally been eager to seek all information that promises any beneficial knowledge, and the sanitary and vital facts, gathered by the State and local Boards, will furnish data from which we shall be able to arrive at correct conclusions, as to the causes and means of prevention of many diseases.

The graveyards of the State are full of those who have fallen victims to their own lack of knowledge, or their own carelessness. It is within the bounds of truth to say that two-thirds of the children that die annually, in Indianapolis or other cities of the State, might have been rescued from death, had their parents possessed the information which should be within the reach of all. Not by means of any "Domestic Medicine," or "Every Man His Own Physician" book, but by well authenticated and practical facts, placed before the people in a reliable shape, so that they should be warned as to the dangers that can be avoided, as the red flag, warns of small-pox or the signal light, of the locomotive. Such disseminated intelligence would furnish the means of avoiding the danger.

Take that disease so common among children, viz: Whooping cough—parents look upon it as one of the necessary ills that must fall upon all children, and regard it as being without danger to the child, and in many cases hail its appearance with a kind of semi-delight. It is true, there is comparatively little danger in the disease, if proper care is taken of the child, and this care must be exercised by the parents, and not by the medical attendant, if there be one. The truth must be made known to the people. Scarlet fever is justly regarded with dread, yet whooping cough has annually, in Indiana, carried to the grave more victims than scarlet fever, and while the Board has at present no means of knowing the exact facts in every case, yet the information it has, justifies it in saying that in nearly all cases of death from whooping cough during the past nine months, the fact that death ensued was due to want of proper care of the child by its parent or nurse, especially at a time when the patient is supposed to be convalescent.

Diphtheria is another of those diseases that has caused fearful

ravages among children. Statistics, gathered by the Board, show that certain diseases are prevalent with this class of the population. This is not always from anything in their occupation or surroundings. The causes for the frequency of death must often be sought for elsewhere. A study of the tables compiled by the State Board, that will appear in the annual report, will show that bronchitis and pneumonia are particularly noticeable for the fatal ending in cases of children, and this frequently is, in a large degree, due to a want of proper preventive measures.

Farmers and their families will, in winter, attend gatherings of various kinds in small and ill-ventilated school houses or churches; stoves are made red hot, and, from the steaming atmosphere, they go forth into the chilling air—ride home through the cold without properly protecting themselves.

In the city, those who attend such assemblages go, at least, provided with wraps to protect themselves against such sudden changes, and the result is, they are less liable to those forms of disease.

It is safe to say that one hundred persons are annually killed upon and by railroads of the State, and that, of the whole number, less than a score are employes of the railroad, while the other persons are those who have no business in the place where they meet their death. It is only bringing such facts to the minds of the people that they can be made to realize their danger. They hear of isolated cases of railroad injuries, but it is the figures in the aggregate that impress them.

In accidents, of one kind and another, fully five hundred persons, annually, in Indiana, meet their death, and, in nine cases out of ten, carelessness somewhere is the cause.

It may be asked, why the State should engage in the work? The State is directly interested in the life and health of every citizen. The longer lived and healthier its citizens, the stronger and wealthier the State becomes.

As to vaccination, the policy of compulsory vaccination has been very much questioned, and the silly objection that such a system interferes with the rights of the citizen, has been made. Every citizen owes some obligation to the community where he lives, and while he may have an abstract right to deal with his own life, he has no right to endanger the life or health of another.

Vaccination is not alone to preserve one from the disease, but also to prevent him from aiding in its dissemination among his fellows.

The prevention of disease is the accumulation of wealth both to the individual and the State. The knowledge *how to prevent*, is based upon *vital* and *sanitary* statistics.

The diseases that are of the most importance in a sanitary point of view belong to the class *Zymotic* (ferments). We may mention, as prominent among these, the following, viz: Small-pox, diphtheria, scarlet fever, chicken-pox, whooping cough, typhoid and typhus fever, puerperal fever, croup, cerebro-spinal meningitis and cholera, dysentery, consumption and acute lung affections might be added.

Now let us see what some of the most eminent and practical sanitarians say as to the influence upon human health and comfort the work of State and local health organizations exert, and as to the value of vital and sanitary statistics. We give the following extracts:

PUBLIC ECONOMY OF SANITARY MEASURES.

We are fast coming to understand that the prevention of disease means wealth and prosperity, and that, aside from those high and sacred considerations which move the heart of man to alleviate the sufferings and obstruct the evils that afflict his fellow-man, there is a sharp pecuniary side to your efforts, which, as true citizens of Chicago, we are not at liberty to overlook.

I read in one of your interesting reports that the small-pox scourge of 1871-72, cost the city of Philadelphia over twenty-one million dollars. The facts given, I think, warrant the conclusion. This was manifested in diminished travel and shrunken commerce. Nor is this all; for it appears that this great sum might have been saved, to say nothing of the lives lost and the suffering endured. We rejoice this year in a most bountiful crop; but there are other sources of wealth, quite as visible and more certain than corn and wheat, that do not attract our attention.

Our city has been in commotion for thirty days about the truly serious loss of four or five million dollars by our savings

banks, but we probably annually lose a much greater sum in, and indifference to, sanitary means, and without excitement and almost without protest.

There is not within the limits of Chicago a business uninjured, a palatial residence or a cottage, the value of which is not diminished by the pestilent odors that sweep over the city. Yet men, busy with their own affairs, who pass for sagacious, far-seeing men, act as though it were no concern of theirs—no concern of theirs as to the drainage of houses two blocks away; no concern of theirs whether the air, common to all, becomes polluted; but typhoid and scarlet fever among their loved ones at home utter a mournful denial of these assertions. And thus you will prove that the widest traffic, the most permanent prosperity, and the largest security for the home are founded on the truth that man is his brother's keeper.

WIRT DEXTER, ESQ.

A. P. H. A. Report, Vol. IV.

POSSIBLE FUTURE ACHIEVEMENTS IN HYGIENE.

Let us now inquire what are some of the possible achievements of hygienic science and art in the future, and the best means for their accomplishment.

One of the most promising fields of labor for the hygienist is, it seems to me, in the still further prevention of sickness and deaths from miasmatic causes.

Referring to our vital statistics for 1871, we learn that the probable number of deaths in the State, as corrected by the compiler, was 18,094, and that of these 4,832, or about 27 per cent., were believed to have been caused by miasmatic diseases. Certainly this number should be largely increased, for there were reported as deaths from pneumonia, 482; or, when "corrected" by multiplying by 1.86, 800. Of these we may add to our former number of deaths from miasmatic causes at least 500, as surely due to miasmatic causes as any others, and we have our list swelled to 5,332 from these causes in a single year.

As many persons can better appreciate the loss to the State by preventable deaths when the value of the years of "effective

life" lost by them is put into dollars and cents, let us, for a moment try, approximately, to estimate the real money loss to the State by these miasmatic causes.

The last sickness of the 5,332 persons who die from these causes, including loss of time, must have cost on an average \$50 for each person, and the funeral expenses must have been, on an average, \$25 for each one, giving a cost—actually a loss—to the State of \$399,900.

Now, as these causes of death are accounted by all hygienists as preventable, it is safe to say that a large number of these persons died prematurely. Let us suppose, then, that these persons died sooner than they otherwise would by an average of ten years, and that one-half of those years thus lost might be said to be years of "effective life."

The State then loses, annually, 26,660 years of "effective life," which can not be estimated at less than \$150 per year, giving a money loss of \$3,999,000.

English observers and statisticians have estimated that for every death two persons are constantly sick.

Thus for every death from the same causes under consideration, it is probable there are two years of sickness from the same causes in other persons in this State, or 10,664 years of sickness from miasmatic causes in the year 1871. Counting one-half of these years of sickness as in the "effective period" of life, we have their money value, \$150 per year, \$799,800, which is really so much loss to the State.

Nor is this all; for the cost of these 10,664 years of sickness, in medical attendance, nursing and loss of time of parents and friends can not be estimated at less than an average of \$200 per year, thus entailing another loss to the State of \$2,132,800. Here, then, is the approximate money loss to the State from these preventable causes of sickness and death:

Sickness and funeral expenses of those dead from these causes, 5,332	\$399,900
Loss of effective years of labor by these premature deaths, 26,660.....	3,999,000
Loss of effective years of labor from sickness of others, 5,332 years	799,800
Loss in cost of 10,664 years of sickness.....	2,132,800
Total loss to the State.....	\$7,331,500

That probably one-half of all this loss may be saved to the State is, I think, apparent from the following and other considerations:

Dr. Edward Jarvis, in a paper contributed to the State Board of Health of Massachusetts, on "Political Economy of Health," very concisely remarks that "the effective power of a nation is in the number of its people in sustaining period" (*i. e.*, between the ages of twenty and seventy), "and in the proportion these bear to the dependent classes."

"Collective personal gain is public gain, and aggregate personal loss is, to the same extent, the suffering of the community."

"The State thus has an interest not only in the prosperity, but also in the health and strength and effective power of each one of its members."

Whatever has, in the history of the race, and especially in the history of civilization, intended to add to the efficient power of individuals of the various nations, is really embraced in hygienic science and art. Their's are the better adaptations of means, circumstances, and habits, by which man's life has been expanded and his strength increased; their's the various improvements in agriculture, in vegetable and animal life, by which man has obtained better and more constant food; their's, too, the wonderful and manifold improvements in the arts, by which man is better clothed and housed.

The gradual increase in the length of human life since the commencement of the Christian era, is the result, and really marks the progress of the benignant rule of the goddess Hygea.

In the third century, the average duration of life among the most favored classes in ancient Rome was thirty years. In the present century, the average longevity of persons of the same class is fifty years, or an increase since the third century of 67 per cent. There can, I think, be no doubt that in the lower classes the increased longevity is still more striking.

H. O. НІГЕНСОСК, M. D.

Michigan Report, 1876.

RESPONSIBILITY OF BOARDS OF HEALTH.

While the responsibilities of Boards of Health in cities and villages are proportionately greater than in the townships, yet the importance of organization and careful attention to the sanitary conditions of the town must not be underrated. Epidemics sometimes sweep through a farming community, which might easily have been prevented by prompt action on the part of the Board of Health, had immediate notice of the first case been given to them. Nuisances in the shape of stagnant pools of water or undrained marshes often exist in the township, which are fruitful sources of disease to the inhabitants, and should be abated in the manner provided by law. All Boards of Health should, therefore, ascertain whether any cause of disease exists within their jurisdiction, and if there is reason to apprehend that any source of sickness may possibly arise from the action or neglect of any person, the Board should establish such regulations, and take such measures as they may think necessary to prevent the same.

HON. LEROY PARKER.

Michigan Report, 1879.

The statute now gives the State Board of Health only directory or advisory power. Practical experience has demonstrated the necessity for giving the rules and orders of the State Board mandatory power, with statutory force and effect.

Contingencies have arisen, and will arise, where local influences prevent the operation of the health laws for the protection of the people. Authority should rest somewhere in such cases, to secure to communities the full benefit of the law, and no where could it be vested with more impartial judgment than with the State Board of Health, composed, as it is, of representatives from different parts of the State.

Emergencies often exist requiring prompt and immediate action to protect the public health. Boards of Health should, therefore, have the power to restrain persons from maintaining a nuisance until a hearing can be had before a court. Such is the law in Massachusetts, and the Supreme Court of that State has confirmed the action of Boards of Health under the statute granting such powers.

Iowa Report, 1881.

WORK OF HEALTH BOARDS.

As regards villages, the case is worse than in cities. Out of 152 incorporated villages, an annual report for the year ending September 30, 1874, has been received from only nine clerks. There seems to be a greater degree of indifference to all laws and measures for promoting the public health in villages, than in either cities or townships; and this is particularly unfortunate, because it is in just such places that so much can be done in the way of preventing sickness and death. It is in villages that water supply is peculiarly liable to be contaminated, and the inhabitants to be decimated in consequence, though such diseases as diarrhea, dysentery and typhoid fever. It is in villages that the ordinary contagious diseases spread with such facility and rapidity, through the free communication of children. It is in villages that that fearful disease, cerebro-spinal meningitis, or spotted fever, most frequently causes the greatest destruction of life. If every village had an actual and active Board of Health, how much might be done to search out and remove some of these causes of sickness and death which now strike down hundreds from the village population of this State in every year.

It is possible that some part of this apparent indifference really comes from comparative ignorance of the subject, both as regards the possibility of preventing sickness and death through sanitary work, and of the duties of village councils as local Boards of Health. In fact, it is not reasonable to expect that members of village councils, elected to perform the various duties of the office, should always be fully acquainted with the latest teachings of sanitary science.

Michigan Report, 1874.

VITAL STATISTICS.

The comparative success which has attended the efforts to secure these returns of vital statistics, is shown by their steady increase, while the per capita expenditure is not as great as when there was no attempt at classification or study. It is only as to the returns of births that our methods do not seem to be perfected. So far as vital study is concerned, we are able

from those obtained, and from the deaths under one year of age, to compute allowances. But it would be better if the returns themselves were more complete. As it is, they are several thousand in advance of those under the last system, besides being accompanied with details of value in vital study. Until our governing authorities, and especially those of our cities, come to know that proper sanitary care and policy requires that the number of young children be known, in order to limit and protect from disease, they will be insensibly contributing to the general death rate.

We find in the State no tendency to resist a law which has its foundations in a decent care of human life. It is not officious for the State, in the case of a marriage, to claim that it have the recorded evidence thereof, with such appended facts as, in the judgment of those who have made the civic care of population a study, are deemed desirable. As to births, the trouble arises from negligence and delay rather than from intent. Some at first were disposed to question the right which a State has to enforce a duty without compensation. This duty has been imposed by a law on the statute book for thirty years, and the principle is acknowledged in many cases, where lawyers, who are apt to protect their own legal rights, are required to perform services for which no direct pay is provided. It would be easy to show that incidental benefits accrue to medical men from all laws that look to this kind of guardianship over such vital conditions of population, as they bear relation to.

As to deaths, the common sentiment is that the death and the cause of death of every person should be authenticated.

In most of the returns of death there is evident carefulness of diagnosis, or a note showing some doubt or complication which is recognized. We invite the attention of all students of statistics to the data already on hand, as showing how informatory these records are, if, for instance, any one physician is disposed to abound in "general debility," "cancer of liver," "pyaemia or septicaemia" (without locality,) "congestive or gastric liver" or other doubtful term, the return itself comes to be eliminated and either is dropped from the vital tabulation or loses its significance in the multitude of numbers.

E. M. HUNT, M. D.

New Jersey Report, 1881.

Until accurate registration of vital statistics is thoroughly carried out by each State, it obviously will be impossible to have an efficient system of State Preventive Medicine. What we have said of the States may be applied to the United States. I cite the following fact as illustrative of these remarks: I was desirous of learning whether we had proof from reliable statistics that a man lives longer now than he did a century ago. This is believed to be true, if we may judge from past history, wherefrom it seems that the duration of life has been steadily augmenting with advancing civilization. To get accurate data, I consulted some noted experts in the community, but I have not been able to get satisfactory replies. Not one of them could refer me to printed vital statistics *proving the fact* for these United States.

Public Hygiene by Henry L. Bowditch.

THE REGISTRATION OF VITAL STATISTICS IN THE UNITED STATES.

Abstract of a Paper Read before the General Session of the American Social Science Association, by Dr. Elisha Harris.

The census enumeration of the population ought to be absolutely accurate and complete: but the method of enumeration is so essentially faulty, that, as respects the poll of the living inhabitants, even the total columns are equivocal, while all the distributive grouping is untrustworthy. The essential viciousness of each successive census will remain unremedied until the methods of enumeration are made exact: until all the facts relating to births, marriages and deaths, and the causes of death, are currently registered as public records in every county and State. Vital statistics comprise the account current of the State with the lives of the inhabitants. The registration of these statistics is a duty rendered to the State, and is to be maintained by ways and means which the State alone can provide. But wherever a State has so provided the methods and means for the performance of the duties of vital registration, the people must comply with alacrity to the requirements of the registry laws. Birth records should be so complete as to establish and perpetuate the identity of individuals, and such other facts should be secured in respect to both the child and

its parents as the law may require. Vital statisticians are already fully agreed on the elements of good birth records. The claim, both of the State and the infant, as to the record of its birth, is imperative, and allows no optional delay beyond the reasonable time necessary for certifying and filling the record for public registration. Claiming such a right, the State can not do less than define the duties and obligations it imposes on the several persons interested, who can not justifiably postpone the certification of a detailed and complete record. *In cases of illegitimate children, as much information as possible should be obtained, particularly as to the occupation and nationality of each parent.* Such records, made with faithfulness, will subserve the interest of statistical and biographical science. *Faithful registration of still-births should be secured by judiciously regulating official returns and the suitable interment of the remains.* *The interests of morality, as well as of science, demand this record.* *All records of marriage should be registered as soon as verified.* The law submitted is in harmony with the statutes of Massachusetts, Connecticut, Rhode Island and Illinois. Amendments of existing statutes may be readily effected in the States which need merely to give harmony and efficiency to existing laws, while in States which have only cumbrous and inefficient statutes relating to marriage registration, the adoption of an entirely new system, under new laws, will be more practicable than amendments. The epitomized anthropological history of a life, a faithful certificate concerning time, place and social conditions of each death scene, and medical facts in regard to causes of death will ever impart to records all the real importance which family, State and officers of health will justly claim. All events and causes of mortality should be followed back until the question may be answered, "How may human life henceforth be guarded against the causes of sickness, injury, and premature death?"

As it is the chief object of this report to suggest the arguments and plans by which uniformity and completeness should be given to the registration of vital statistics, we shall proceed directly to this purpose in all we submit in regard to records and registration. Certain essential conditions should be kept in view in devising the plan of the greatest practical utility and completeness in the records. These may be enumerated

as a complete registration of birth in every community; complete registration of marriage, the records of which shall be comprehensive. This branch of registry provides a basis of correct information concerning the foundation of families. The statute should provide for thorough and scientific verification of violent and unknown causes and circumstances of death, and effectual provision for specially verifying the fact, and the attendant circumstances of deaths. The entire matter of records and registration of mortality should be placed under the supervision of expert sanitary officers or boards of health.

EXTRACT FROM PROCEEDINGS OF A CONFERENCE OF VITAL
STATISTICIANS, 1880.

Dr. Thompson, President State Board of Health of Kentucky, says: "We have had but little experience in Kentucky, except in a few localities, in gathering these statistics. I am very confident that the large cities of the West, including Cincinnati, St. Louis, Louisville and Chicago, do not obtain perfect returns, much less States at large. It is impossible to give anything approximating a correct death list except through physicians. And yet some physicians think you are inquiring into their private affairs when you require that they shall state the causes of death of their patients. The parents and guardians also think the causes of death of friends concern only themselves. In Kentucky we are endeavoring to compel the physicians to make the certificate under oath. It would take years to educate the public to make these returns, but we can educate the physicians much sooner, and I think that the whole duty must be put upon them. It is true that it is for the benefit of the people, but it is also for the information of the profession, and hence, in my opinion, *no dead body should be buried without the certificate of the physician*. It is perfectly clear to me that in the rural districts it will be impossible ever to gain anything that will be satisfactory, except through the profession."

Dr. Lindsley, Health Officer, New Haven, Conn.: The law allowed every town to elect a Registrar, but in failure of such election the Town Clerk was to be Registrar. Wherever he

was Registrar, very little interest was taken in the matter of these certificates, and frequently he would make collections of them but once a year. But where a Registrar was elected, he took a personal interest in it, and the collections and records were far more accurate than otherwise. At the present time we have a law by which, in all the cities of the State, *a burial permit is required*. That has been since the organization of the State Board of Health, two years ago. I believe that it has operated so far very well, and the records numerically are *almost perfect*. I know that it is so in New Haven. I do not know of a single instance where a body has been buried without a permit. I believe that the physicians are the proper parties to look after these matters, and that we can educate the profession to the practice of giving them.

Dr. Clemann: We have an undertaker's certificate and also a physician's certificate on the same blank. I think in Philadelphia the undertakers are registered, and an inspector is detailed for the purpose of going around among them at certain times to see that they are attending to their duties in returning these certificates. The certificate from the cemetery is entirely a different thing. It is not on the same blank. If it is found that those certificates do not coincide, the matter would be inquired into, and if anything is wrong, a fine of \$25 will be *imposed all around*. One has been enforced within a month. The certificate is returned by the undertaker.

Dr. Thompson: In Kentucky, there are no registrars, but we have City Clerks, and it is a *finable offence for the undertakers to bury any one without authority from the city to dig the grave*. The City Clerk can not give the authority until he receives the certificate of the physician. The family have to get that from the doctor. It is generally made the duty of the head of the family to carry that certificate to the physician wherever his place of business is, and I understand it works well.

Dr. Rauch, Secretary State Board of Health, of Illinois: There is no trouble in Illinois; but the undertakers are not the parties who are made to make the returns. *The medical men are the parties responsible*. The certificates are, as a general rule, brought to the office of registration by undertakers, who are punishable by fine, as are cemetery keepers and physicians, for neglect of duty. With regard to the persons who should make

these returns, I would ask the question: Ought not this responsibility to be divided? In Illinois, the duty rests entirely on the medical men. Recently the question of fee has been raised. Before that was raised there was no trouble at all. I think it is the duty of the medical men to make these returns. They can do it better than any one else. It does not require a great deal of time and trouble to obtain what is required.

Dr. Thompson: We have no difficulty in Kentucky in getting all the information in regard to the certificate. The penalty imposed on the sexton of the cemetery takes the difficulty entirely off our hands. They are not allowed to bury any body without a permit from the Health Department, and the Health Department will not grant certificates unless they are signed according to the ordinance.

Dr. Ames, of Massachusetts: The bulk of the discussion seems to be upon the registration of cities, as might naturally be supposed. But there is a broad field in the country districts. *The trouble with the country districts is that they are sparsely settled, and a physician is called over a large territory, and unless he attends to the certificate at the moment of death he may not be able to attend to it for some time afterward.*

If there could be some one to visit the return of the householder, who makes the primary return: *if some officer of the town could visit it*—and I believe something of that kind might be done—registration laws might be passed so as to secure everywhere completeness of the return, where now no law could be passed. And I commend that feature of it to the attention of the committee, as one which must everywhere be met, and one which ought to be met intelligently, and at the same time registration be effected.

Dr. White, of New Orleans: These duties in New Orleans are managed as follows: The Board of Health passed an ordinance stating that no body shall be buried in any part of the city, or removed from the city, without a permit from that office. *That permit is based on the certificate of a physician.* It is considered the business of the family to furnish the certificate, but the doctor signs it. There is no difficulty of the working of that matter in New Orleans. No dead body can be removed from the city without a permit from the Board of Health, and a fine can be levied on the railroads for carrying

out bodies without permits. The charge for the burial permit is, I think, fifty cents. The money for these permits goes into the treasury of the Board of Health.

Vital Statistics, by J. D. Plunket, M. D.

Thus far, the State Board of Health has organized and set in motion the system of registration and vital statistics, and if this system seems to be complicated, it is because numerous laws relating to the matter—and all in operation—have to be co-ordinated as to secure the action of local authorities as well as insure an efficient supervision and complete records at the State Bureau of Registry.

By this ceaseless survey, description, comparison and mapping of the courses of disease, and the varying rates and causes of mortality in more than a thousand registration districts, the whole State will derive practical results far more useful than any merely numeral summaries that would only record the total losses by death, and the gains by birth, and the establishment of families by marriage. The purpose to render this branch of work directly tributary to public interests is well formed and now seems attainable. The State Board of Health has recognized the practical relations of this branch of its work, as defined by a sanitary statesman of England, who has emphasized his estimation of it by saying: "Considered physically, the main object of correct civil registration of births, deaths and marriages, is to aid in disclosing the causes of diseases. Considered legally, the object is to provide the means of tracing descent and proving personal identity. And considered politically, it is to assist the government in arriving at correct conclusions in regard to measures of internal economy, etc." Completeness, accuracy, and the requisite attestation of such records should be fully attained under the system of vital statistics in the State of New York.

E. HARRIS, M. D.

New York Reports, 1880.

WORK OF HEALTH BOARDS.

For several years I have been comparing the results of the work of municipal Health Officers, as contrasted with that of municipal Boards of Health, both in this country and Europe. I find that, in the great majority of cases, *the single officer succeeds better than the Board*. Where the Health Officer system fails it is often because the officer attempts to continue to practice his profession and perform his sanitary duties. It is not desirable that a Health Officer should be a practitioner of medicine; for, if he is, he can hardly avoid the distrust and dislike of his fellow-physicians, if he does his duty; nor can he be expected to be as severe on the nuisances of his wealthy and influential patients as on those of others.

J. S. BILLINGS, M. D.

A. P. H. A., Vol. VI.

SANITATION.

"One of the first great objects of sanitary organization," to use the language of a distinguished sanitarian, "is to watch the death rate; to watch it not only over a city or parish, but in detail; to watch it from month to month, and even from week to week; to watch it as affected by different diseases, and particularly what are termed epidemic diseases, and such diseases as we believe to be, in a great degree, preventable; and this done, to make known the results from time to time to those who are chiefly concerned in sanitary evils, so as effectually to bring home to the dwellers in darkness, ignorance and disease, the immense significance of the facts taught by these figures."

At the beginning of the fourth century, Paris is said to have "lost her population at the rate of 50 in every 1,000 annually, and notwithstanding the great increase of her population up to the time of the late war, her death rate was then only about 28 in 1,000. At the close of the sixteenth century, the average duration of life was about twenty-one years; in 1833 it was forty-five years and five months."

Under the influence of improved sanitary measures, wher-

ever they have been strictly enforced and intelligently conducted, the results, though far from what it is yet hoped to attain, are even more gratifying. In England, after the adoption of measures for the improvement of cities, "in nineteen towns the annual mortality, which had been 28 in 1839 for years previous to the improvement, fell to 21 in 1,000."

In Liverpool, the rate of mortality was reduced from 38.4 in 1,000 to 26 in 1,000. In five towns, according to Latham on Sanitary Engineering, "the saving of life * * * averaged 25 per cent.; while in the two diseases, typhoid fever and consumption, the average reduction was 55 and 25 per cent., respectively."

It is further shown by Dr. Geo. Buchanan that, by the introduction of sewerage, drainage, and water supply into twenty-five cities and towns, possessing an aggregate population of 593,736, "the average of the death rate per 10,000 for the different places, had decreased as follows: From all causes from 247.55 to 219.87; from typhoid fever, from 13.34 to 7.8; from diarrhea, from 8.45 to 7.66; from pulmonary consumption, from 33.44 to 27.3; among infants under one year, from 55.65 to 50."

One additional example, drawn from the sanitary records of England, where hygienic measures for the prevention of disease have been longest and most efficiently pursued, may be deduced from the testimony of Dr. Buchanan in the ninth report to the Privy Council, showing that in twenty-five towns where a system of sewerage had been introduced, in nine of these the number of deaths was diminished over 50 per cent., and in ten others from 33 to 50 per cent., the average reduction being about 45 per cent.

Even in the United States, where sanitary supervision has been only partly and recently introduced, during the last twenty years, up to and including 1870, the percentage of deaths to the population had decreased from 1.39 in 1,000 to 1.28 in 1,000. According to Dr. Henry B. Baker, the efficient Superintendent of Vital Statistics of Michigan, the death rate in that State had been decreased at each census. In 1850 it was 1.14; in 1860, .99; in 1876, .94 per cent., effecting a saving, in a single year, of 2,317 lives, and, if we regard its financial aspect, a total of \$1,899,940.

St. Louis, from one of the most unhealthy, has been raised to one of the healthiest cities of the United States; and such has been the gratifying result of the general attention paid to the improvement of cities, and the removal or destruction of the recognized causes of disease, that it has been laid down as a rule, that any excess over 14 deaths in 1,000 of population, is unnecessary, and the result of known hygienic laws. That such result can be attained is a legitimate conclusion from what has already been achieved, as in St. Louis, just mentioned, where the death rate for 1875 was only 14.46 per 1,000.

Another fact encouraging to those engaged in the work of sanitary reform is that so forcibly alluded to by Dorman B. Eaton, LL. D., in a discourse delivered in 1875, that as the health of communities increases, crime diminishes. In Glasgow, while the death rate fell, between 1869 and 1873, from 34 in 1,000 to 29.09 per 1,000, the whole number of crimes were reduced from 10,899 to 7,876: 1867 to 1873, of thefts alone there was a reduction of from 1,192 to 264.

These facts are rapidly forcing themselves upon the observation of the public. They have attracted the attention of Legislatures and State authorities everywhere, and their legitimate result has been the creation of State Boards of Health in nearly one-third of the States of the Union.

F. M. HATCH, M. D., Sec'y.

Report of State Board of Health of California, 1877.

VACCINATION.

As a rule, one successful vaccination in childhood protects until about fourteen or sixteen years of age. If, however, there be epidemics of small-pox near, or the danger of exposure great, the process may be repeated oftener, as there can no harm result, as no effect will be produced if the person be already protected by the previous operation. One trial, however, in face of danger, is not conclusive, and care should be taken that the operation be thoroughly performed.

In England, the small-pox death rate has decreased one-half since the introduction of compulsory vaccination. In many

cities where periodical inspection of all the schools, and house to house visitation, with free, though not compulsory, vaccination takes place, often the disease is hardly known unless imported, and then never becomes extensively prevalent, but is at once stamped out.

The number of persons efficiently vaccinated or successfully revaccinated, that are attacked even during an epidemic, is very small; and where the vaccination has been imperfect the disease is usually greatly modified in severity.

When successful vaccination and revaccination has been done, the proportion of deaths to attacks is but one-seventieth part of that in unvaccinated persons. By universal revaccination, small-pox has been stamped out of the army and navy. Experience here shows that one successful revaccination in an adult is sufficient. (England).

Connecticut Report, 1879.

HOW TO REDUCE THE DEATH RATE.

There are reported in the vital statistics for 1871, 75 deaths as having occurred from small-pox; or, when "corrected" by multiplying by 1.86, 139 deaths.

Compulsory vaccination, carefully carried out by faithful and vigilant local Boards of Health in every city, village, and township of the State, together with more complete isolation of every case of variola and varioloid, under the present statutes of the State on this subject, would, without doubt, reduce the mortality from this cause to a very small per cent. of what it now is.

Can any one doubt that the same may be true in respect to the 696 (or, as corrected, 1,294) cases of death from scarlatina?

It seems a late day to point out the danger of its contagion, and the absolute necessity of complete isolation for the prevention of the spread of this disease so fearfully fatal among children. There has grown up a feeling in the public mind as productive of evil as it is devoid of truth, that scarlatina is one of the inevitable children's diseases, and, although often extremely dangerous to life, it must be submitted to, and, on the whole, the sooner the children have the disease the better.

If the same care of isolation, too, were used in cases of measles, diphtheria and whooping cough, the fatality from these diseases would be largely reduced. And what is true of these last named diseases is, for far stronger reasons, true of typhus and typhoid fevers. Let all public and private nuisances be abated, and all private and public rooms be well-ventilated, and we shall have recorded but very few original cases of typhus or typhoid fevers; and let these few be strictly and completely isolated, and no other would follow.

H. O. HITCHCOCK, M. D.

Michigan Report, 1876.

I.—SMALL-POX A PREVENTABLE DISEASE.

It has long been known that small-pox can be prevented or modified by vaccination. It is now believed that a wide-spread epidemic of the disease can be attributed only to an equally wide-spread ignorance or willfulness concerning small-pox and its prevention by vaccination. No intelligent person need have small-pox.

II.—WHY VACCINATE?

Because unmodified small-pox is so deadly a disease, and so often disfigures and enfeebles those who recover, and because by traveling or by travelers, by articles received in the mail or from stores or shops, or in various other ways, any one at any time may, without knowing it, be exposed to small-pox, it becomes important, so far as possible without injury to health, to render every person incapable of taking the disease. This may be done so perfectly by vaccination and revaccination with genuine bovine vaccine virus, that no question of ordinary expense or trouble should be allowed for a day to prevent the careful vaccination of every man, woman, and child in Michigan, and the revaccination of every one who has not been vaccinated within five years. It is well established that those who have been properly vaccinated are far less likely to take small-pox if exposed to it, and that the very few who have been pro-

perly vaccinated, and have small-pox, have it in a much milder form and are much less disfigured by it than those who have not been thus vaccinated.

In Sweden the average number of deaths in each year from small-pox per one million inhabitants was :

Before the introduction of vaccination (1774-1801).....	1,973
During the period of optional vaccination (1802-1816).....	479
During the period of obligatory vaccination (1817-1877)....	189

Vaccination was introduced in England near the beginning of the present century, and since 1853 compulsory vaccination has been attempted. In England the number of deaths in each year from small-pox per one million inhabitants was :

At the close of the last century.....	3,000
From 1841 to 1853 (average).....	304
From 1854 to 1863 (average).....	171

In the Bavarian army revaccination has been compulsory since 1843. From that date till 1857 not even a single case of unmodified small-pox occurred, nor a single death from small-pox.

During forty-two years of duty, Dr. Marson, physician of the London Small-pox Hospital, has never observed a single case of small-pox in the officers and employes of the hospital, who are revaccinated when they enter the service, and who are constantly exposed to the infection.

"Out of more than 10,000 children vaccinated at Brussels with animal lymph, from 1865 to 1870, and who went through the terrible epidemic of small-pox which, in 1870 and 1871, frightened the world, not a single one was, to my knowledge, reported as being attacked by the disease. The same immunity was shared by those, a much larger number, whom I had revaccinated, and who, at the same time, were living in epidemic centers."—*Dr. Warlemont, of Brussels, in North Carolina Medical Journal, January, 1880, Vol. V., p. 2.*

III.—WHO SHOULD BE VACCINATED.

Everybody, old and young, for his own interest, and that he may not become a breeding place for the distribution of small-pox to others, should seek that protection from small-pox which is afforded by vaccination alone.

IV.—WHO SHOULD NOT BE VACCINATED.

Unless exposure to small-pox is believed to have taken place, or likely to take place, teething children, pregnant women, persons suffering with measles, scarlet fever, erysipelas, or susceptible to and recently exposed to one of these diseases, persons suffering with skin disease or eruption, and in general, feeble persons not in good health, should not be vaccinated. In all cases in which there is any doubt as to the propriety of vaccinating or postponing vaccination, the judgment of a good physician should be taken. The restriction as to vaccinating teething children, makes it important that children should be vaccinated before the teething process has begun, because small-pox is very much more dangerous than vaccination. Small-pox is exceedingly dangerous to pregnant women.

Reasons for preferring bovine virus to humanized virus may be given as follows: (1) By the use of the bovine virus there is secured a more perfect or typical development of the vaccine disease; and hence, it may fairly be inferred, a greater protection against small-pox. (2) With the bovine virus and with a clean lancet, and with clean surroundings, there is no danger of communicating syphilis. (3) The bovine virus is far more effective than the humanized virus in revaccination; and where the humanized virus fails, and the bovine virus works, it is probable that there was susceptibility to small-pox which the humanized virus did not remove, but which has been removed by the bovine virus. (4) Greater care can be taken in the propagation of bovine virus, a greater supply can be always at command, and always, but especially in time of urgent danger from small-pox, people can have a better guarantee that they are vaccinated with genuine and pure vaccine virus.

Michigan Report, 1881.

CONDITIONS OF GOOD SANITARY ADMINISTRATION.

But the arguments that sickness and death, as they occur, are providentially inevitable, and that pestilence and famine are pre-ordained messengers of God's wisdom and wrath, before which we must dismiss our reason—that our precautions against

them are vain floutings of our wisdom in the face of Divine Providence—are so nearly monopolized by illiterate grandmothers and superannuated bigots, as to be elements of precaution hardly worthy of notice in our sanitary condition on earth. Though Dr. Lyon Playfair, now a professor at Edinburgh, says that in his day Scotch professors dared not preach such heretical doctrines, and it is not very long since an English company was refused the liberty of deepening the channel of the Guadalquivir, because, it was argued, that if God had intended the river to be navigated, He would have made it navigable.

It is, I think, safe to say that London and Paris lost more lives needlessly, both by the plague and by the cholera, in ten weeks, than either of them have so lost during the last twenty years. Bordeaux, then one of the filthiest towns in Europe, lost 18,000 out of 40,00 of its people in a few weeks. The plague remained longest in Naples, which was perhaps the worst ventilated and worst drained of the large cities of Europe.

There is nothing better settled in regard to life and health than that such diseases as cholera, yellow fever, small-pox, typhus and typhoid fever, can be in great measure kept away by good sanitary administration, the cost and loss of which is infinitesimal compared with what these diseases would cause. They have been, by such means, so far kept out of New York, that for ten years they have caused less aggregate loss and cost, I presume, than either the toothache or the mumps. Cholera came five times to English ports in 1873, and twenty-eight died of it on one foreign ship in London, and yet such were the precautions that not a single Englishman took the disease. In the city of Bombay, with its population of 650,000, made up of all the races of Europe and Asia, and situated in a region where plagues and leprosies and choleras, have through all historic time reaped their greatest harvests of death; where, in 1820, 150,000 persons died from one of these scourges in a few weeks, and the average death-rate had always been alarmingly high; in such a city, within a few years, good sanitary administration, introduced from England, has, by enforcing drainage, ventilation, adequate air-space, by having good water and wholesome food and general cleanliness, accomplished results

which are marvelous. The death-rate of Bombay, in 1873—only about an average year—was only slightly over 24 to a thousand of its people; and Dr. Harris says its death-rate in 1874, was 23.9 to the thousand, being a lower rate than that of Vienna, or Berlin, or New York, or Baltimore, or Richmond. Analogous results have been secured in Calcutta and Hong Kong.

Professor Lyon Playfair says the death-rate of London from 1660 to 1679, was not less than 80 out of every thousand each year. About the latter date better sanitary precaution began to be applied in that city, and especially since 1848, they have been largely and continually improved. Much the same has been the sanitary history of Paris. The wonderful results are that these two largest are among the healthiest, and the very cleanest of the great cities of the world. If New York, or Philadelphia, or Chicago, or St. Louis, or Cincinnati, or Baltimore, was as cleanly and well paved as either Paris or London, the ratio of crime, poverty, death, and taxes, would go down, their pride, population, and productive industry, would go up, and republican institutions would be crowned with a new honor. The average death-rate of London for the past ten years has been only 24 to the thousand annually. In 1874, with its 3,400,700 people, the death-rate was only 22.04 to the thousand. The average death-rate of all England, for the ten years last past, has been 22.04 to her thousand, which is probably lower than in this country; so that good sanitary administration has brought down the death-rate of the two largest cities in the world, and the largest city of India, nearly to that of the general death-rate of two of the most healthy countries of the globe peopled by the most vigorous and enlightened of the race of men.

Taking the records of 1875, and rejecting fractions, the death-rates per thousand of population per year in some of the principal European and American cities were as follows: London, 22, and New York, 29; Liverpool, 25, and Philadelphia, 19; Glasgow, 28, and Richmond, 33; Edinburgh, 21, and Baltimore, 24; Berlin, 27, and Cincinnati, 22; Birmingham, 25, and Savannah, 43; Dresden, 34, and New Orleans, 37; Munich, 45, and Valparaiso (a very unclean city), 64. It will be observed that the average death-rate in American cities is higher than

in England, though, perhaps, not higher than in German cities, where public health in cities has, until very recently, been neglected.

Our city death-rate among children under one year of age is much higher than in English cities.

The high relative death-rates of Munich and Dresden, have caused measures to be taken on a large scale for improving their drainage, water supply, and ventilation; and very soon we may be sure the rate will go down. The comparative low rate of Liverpool has been secured by the most vigorous administration, which within a few years has produced results which every observing traveler has noticed.

Interesting results of sanitary administration in smaller cities and villages might be drawn indefinitely from English experience, and it is in that country that such administration has been carried forward with the most thoroughness. I give these examples from the report of the medical officer to Parliament, made in 1867, relating to villages of from 5,000 to 2,000 inhabitants. It comprises the health statistics for ten years before the sanitary reform, with those of the ten years following them.

In Cardiff, where typhoid fever and diarrhoeal diseases had prevailed, the former subsided in the ratio of 17 to 10, and the latter in that of 17 to 4; while the aggregate death-rate of the place fell 35 per cent. In Salisbury the death-rate fell 20 per cent. and typhoid fever and diarrhoea subsided in the rates of 14 to 4. Consumption subsided in Salisbury, 49 per cent.; in Ely, 47 per cent.; in Rugby, 43 per cent.; in Bouberg, 41 per cent.; in Worthing, 36 per cent.; in Newcastle, 32 per cent.

If anybody consoles himself with the thought that we need no such work in this country, let him read the first report (made in 1873) of the State Board of Health of Minnesota—that fresh young paradise of health to which so many go to be cured. In that report we are told that, in 1871, forty per cent. of all deaths in the State occurred among children not over one year of age; that more deaths are attributed to typhoid fever than to any other disease; that 3,000 persons are (constantly, as I understand) sick of that long-lingering, exhausting complaint; that the average age of those thus carried away is twenty-five years; that there is the least of such sickness in two larger

cities where there is most cleanliness; and the chief cause of this disease the report declares to be "filth which accumulates about us, contaminating the air we breathe and the water we drink; that there is in most of the large towns a criminal want of attention to the construction of sewers and the removal of the contents of privies." Now, Minnesota is not, relatively, an unhealthy State, nor complacently in such sad sanitary condition. But what shall we say of a people, with such a record, which refuses to vote more than \$250 per year to its Board of Health; or of Virginia, refusing to vote a dollar for its State Board of Health, while seeking immigrants from England in presence of a death-rate in Richmond a third higher than that of London in 1873, and higher than that of Bombay in 1874? And such facts as to the death-rate of young children under one year of age lose none of their painful interest when we read in the English medical report of 1873, that in about one-seventh part of England the death-rate among children is only from eight to twelve per cent. of the entire deaths, and that in no district is that ratio higher than thirty per cent.: that is less than one-half that of Minnesota.

As we leave this part of the subject, let us remember that a small reduction of a death-rate means a large reduction of disabling sickness—exemption from pain and anxiety in cases innumerable, and the value of which no money can measure—and an improved physical tone and capacity for study, work and happiness equally incommensurable.

Dr. Playfair says, if England could be relieved of 125,000 needless deaths, annually, she would also be relieved of 1,200,000 cases of sickness; but he does not tell us of how many hundreds of millions of indigestions and headaches. Many striking illustrations of the truths herein set forth might be drawn from the sanitary administration of this country, but the limits of this paper forbid, and my selections might awaken jealousy. The beneficent results attained in the city of New York, however, are conspicuous. Beginning in 1866, when political doctors and ignorant and mercenary partisans were the health officers, the good work of sanitary reform, then placed and since continued in the hands of men of benevolence, science and wisdom, has produced fruits in the presence of which a great metropolis and a whole nation may well be proud and take

courage. Contagions and epidemics have been disarmed and averted; noxious occupations and deadly nuisances without number, besides more than two hundred slaughter-houses, have been removed. Cellars, garrets and tenement houses, more fatal than a decree of Herod to infantile life, have, on a vast scale, been cleansed and ventilated; and the rate of mortality, the security and the general comforts, especially of humble life, have been increased; the best registry of vital statistics in this country has been established, and last, but not least, an appreciative and inspiring public sentiment, which welcomes good sanitary administration as a public blessing, and has extended over the Union, has been there developed.

DORMAN B. EATON, LL. D.

A. P. H. Ass. Reports, Vol. II.

HOMES FOR THE PEOPLE.

In the year 1857, the annual death-rate for the rural districts of England and Wales was 17 per 1,000 of the population, the aggregate 9,750,000 people distributed over 350,000,000 acres, giving nearly 36 acres to each person; during the same year the mortality in towns and cities among a population aggregating 8,250,000, located on lands amounting in all to 2,150,000 acres, or rather less than 4 persons to one acre, was 25 per 1,000, or, on the total number from overcrowding, alone, an aggregate of 68,000 preventable deaths per annum. The same law of an increasing death-rate resultant from overcrowding was illustrated during the cholera year, 1854, in the same countries. There were 134 districts in which the population averaged 915 persons to the square mile; 404 districts in which the density of the population was only 225 to the square mile, and 85 districts in which there were only 122 persons to the square mile. The death-rate from cholera was *nil* in the 85 districts sparsely peopled, 7 in the 10,000 where the population was 225 to the square mile, and more than nine times that number, or 65 in 10,000, in the more densely peopled districts. The bearing of such figures can hardly be questioned.

We do not, from these startling results, arrive at the conclusion that city life is *per se* destructive to vitality. There are

already abundant statistics to render any such idea impossible for the well-informed mind, and whenever the tables of mortalities for cities shall be compiled on plans adapted to show the health and life rates obtaining in different localities more and less favored by position, by construction, and ventilation of buildings, by area of breathing room, by efficient sewerage and by meteorological conditions, we shall find a much more effective reply to such a conclusion.

Some of the best results recorded as to vitality are found in towns, and may be illustrated by a few figures submitted to the Social Science Association by Mr. Michael, the Mayor of Swansea, Wales. That gentleman caused the vital statistics of Swansea to be divided according to the respective densities of population, and he found the A division, resident in superior houses apart from each other or standing on their own grounds, subject to a mortality of only 11 in the 1,000 per annum, while the C division suffered a mortality of 36, or nearly $3\frac{1}{2}$ times the minimum, and the intermediate density lost 20 in the 1,000, or 9 more than the A division.

It is claimed by some writers that the human race would be extinguished in less than two centuries if confined to large cities; but, manifestly, that would depend upon the conditions by which they were surrounded, as the Swansea A division compares favorably with suburban vitality, and there is no reason known among men why every man, woman and child should not have a never-failing supply of pure air.

London shows an aggregate of 10,000 deaths per annum in excess of births, but there are parts of London that are as favorable to longevity as those occupied by the A division at Swansea; and in the worst cities, hygienically considered, length of life is found dependent upon individual action in a very great degree. For very many centuries the Jews were systematically persecuted by governments, and people all over Europe, condemned to live in particular quarters in all the principal cities, and robbed without scruple by the ruling class, if they were so ill-advised as to make a show of comfort or wealth. Under such, and manifold other disadvantages, they adhered more or less strictly to the rules of life with reference to personal purification laid down for them of old time, and we find them leading the whole human race to-day in the essen-

tials of vitality. Prussian statistics show that the mortality per year among 100,000 Jews is less by 890 than the deaths in the same time among the same number of Christians: the numbers being 2,461 Jews to 2,561 Christians; and in every particular the chosen people manifest greater powers of endurance. A few results obtained from 100,000 on each side, will show how complete and advantageous is the contrast favoring the Jews. There were among the Christians 443 still-births; among the Jews, 89; a difference of 54 to our disadvantage. It might be supposed that the decreased number of still-births would be offset by a larger average of weakness in the offspring of Israel, but precisely the reverse is the fact, as only 453 children of that race die under one year, while 697, or more than 50 per cent. above the Jewish average, die in the first year out of the aggregate of Christian births. In the four years next ensuing, 386 Jewish children die, the offspring of Christians, already much smaller in number, still heading the death-rate by nearly 25 per cent., the number being 477. From five years old to fourteen, 151 children of the Jewish children fall out of the ranks, and one-third more, or 202 Christian children die. From that age until twenty-five, the Jews lose 125, the Christians 155.

During the twenty years ending at forty-five, there is a loss among the Jews of 231, and among the Christians of 334, or 103 in excess. So marked was the exemption of the Jews from the plagues that decimated all nations during the middle ages, that they were charged with having poisoned wells and springs, and only active interference on the part of the authorities prevented a general massacre of the cleanliest people on the continent.

These illustrations show the potency of their modes of life in warding off maladies, as well as sustain the proposition that men may make city life conduce to comfort and longevity by wisely controlling circumstances. Men need not fall victims to epidemics, although surrounded by evil conditions, unless they allow their physical systems to become weakened and their minds to sink into demoralization.

Town life is not necessarily more brief nor less healthful than life in the country. The conditions of longevity can be filled in one location as well as the other.

Wisconsin Report.

The first annual report of the Indiana State Board of Health will shortly be issued. The statistical portion of that report will embrace returns of births, marriages, deaths, and diseases dangerous to public health, as received from Health Officers up to September 30, 1882. We give here the following extract from the forthcoming report:

There is an opinion held by many that, while sanitary rules are needed to be enforced in cities, and for this purpose City Boards of Health are needed, or are at least allowable, in the country there is no necessity for any such rules or organizations. In the country it is held that the air is pure, and the water uncontaminated, that the ill effects of over-crowding are not known, and that preventable sickness is comparatively unknown outside of the crowded cities.

If we attempt to reason with those holding such views, we are met with a general denial, and the advancement of certain ideas derived from the poetical view of the case, the "tangled wildwood," the "nectar that Jupiter sips," and the "free and pure country air," is quoted as proof of the fact that the country keeps itself pure, and that such condition is sustained by the unaided laws of nature. Man is not called upon, while in the country, to exert any care as regards his surroundings; to be in the country is to be where health abounds, etc.

Certainly, this view is all wrong. While the curses accompanying over-crowding are found in cities, still, as in other cases, such ills have compensating blessings. Men are found in such places exerting themselves, and providing means for the removal of that which would cause sickness, and finally drive them from that location, and in consequence of such care the centers of population are often less afflicted with preventable forms of disease than are the rural districts, for in the latter, a "trust in Providence" system prevails—an apathy born of ignorance and sloth, and kept up by false teaching and penuriousness, permits that which destroys to remain, and prevents the needed protective influences from being exerted.

To sustain our position we refer to the accompanying tables:

TABLE X—CAUSES OF DEATH.

Ten Causes of Death by Counties, the Total Deaths from all Causes, with the Per Cent. to the Total Mortality in each County.

COUNTIES.	Population, 1880.	TEN CAUSES OF DEATH.										Total Deaths from these Causes.	Per Cent. of Total Mortality.
		Total Deaths from All Causes.	Small-pox.	Epidemic.	Scarlet Fever.	Whooping Cough.	Typhoid Fever.	Cerebro-Spinal Meningitis.	Pneumonia.	Bronchitis.	Consumption.	(Assaults.)	
Whole State*	1,909,916	11,380	86	161	69	107	482	229	1,094	192	1,341	390	4,151
Adams	15,285	89	2	3	1	1	1	1	10	5	7	3	30.35
Allen	54,763	106	3	3	1	1	1	1	12	5	12	11	30.38
Bartholomew	22,777	144	3	3	1	1	1	1	27	5	17	4	32.09
Benton	11,108	43	1	2	1	1	1	1	11	1	4	1	32.35
Blackford	8,020	31	1	1	1	1	1	1	11	1	2	1	34.55
Boone	25,922	105	1	3	8	4	5	1	11	2	26	4	35.23
Brown	10,204	65	1	6	1	1	1	1	6	4	4	1	35.38
Carroll	18,345	157	6	6	1	1	1	1	22	4	9	1	36.19
Cass	27,611	241	1	7	1	1	1	1	21	4	39	8	37.01
Clarke	28,610	241	1	7	1	1	1	1	21	4	39	8	37.01
Clay	25,854	67	1	1	1	1	1	1	4	2	5	6	37.34
Clinton	23,472	63	1	3	2	1	1	1	3	1	3	3	37.53
Crawford	12,836	63	1	1	1	1	1	1	3	1	3	3	37.53
Davies	21,552	171	5	1	1	4	4	4	14	4	12	17	38.91
Dearborn	26,671	116	5	3	1	1	1	1	16	4	11	3	43.96
Decatur	19,798	124	1	1	5	1	19	1	10	1	16	1	45.29
DeKalb	20,225	67	1	1	1	1	1	1	6	1	6	1	46.11
Delaware	22,820	135	1	1	1	4	3	1	18	1	8	8	47.17
Dubois	15,992	118	2	1	1	2	10	1	18	1	6	1	47.22
Elkhart	32,545	165	2	2	1	1	4	1	19	5	18	4	49.09

Exeter	11,364	81		4			1	1	6	6	11	11	4	33	38
Flag	27,436	164					1	1	6	6	11	11	4	57	51
Fontaine	25,238	99	4				3	3	4	4	9	9	11	40	44
Franklin	25,092	67		3			1	1	1	1	1	1	1	37	37
Fulton	14,301	63					2	2	4	4	6	6	6	40	45
														42	48
Gilson	25,742	140					13	13	11	11	15	15	6	54	56
Grand	25,618	84					6	6	7	7	8	8	2	41	43
Groome	27,706	177					1	1	5	5	23	23	1	57	59
Hamilton	24,501	148	3				4	4	21	21	15	15	1	51	54
Hancock	17,425	68					5	5	16	16	16	16	1	39	42
Harrison	25,296	135					5	5	18	18	17	17	3	51	54
Hedricks	25,981	180		4			10	10	20	20	22	22	1	64	67
Hestry	25,046	141					2	2	13	13	17	17	1	50	53
Howard	19,784	136	1				2	2	10	10	10	10	4	39	42
Huntington	21,865	87					6	6	11	11	9	9	1	31	33
Jackson	25,616	125	1	1				5	11	11	16	16	7	47	50
Jasper	9,463	40		2			1	1	7	7	4	4	1	16	17
Jay	19,284	70		2			3	3	5	5	5	5	1	20	21
Jedison	25,997	84		1			2	2	6	6	13	13	1	37	40
Jennings	16,453	90		1			3	3	1	1	5	5	1	14	15
Johnson	19,477	170					6	6	18	18	23	23	1	67	71
Knox	28,724	116					3	3	11	11	10	10	1	38	40
Kozmisko	28,194	95		2			4	4	6	6	6	6	1	21	22
Lafayette	18,628	80		1			4	4	7	7	7	7	1	26	27
Lake	16,694	92	2	1			13	13	1	1	4	4	1	35	37
Laporte	26,085	199		2			4	4	12	12	18	18	1	67	71
Lawrence	18,737	106					2	2	6	6	15	15	1	42	44
Marion	27,727	198		1			8	8	4	4	20	20	1	58	61
Marion	16,782	94	11	3			39	39	19	19	190	190	44	436	462
Marshall	25,414	94							11	11	8	8	9	29	30
Martin	15,475	57					2	2	10	10	6	6	1	24	25
Meant	24,083	154					4	4	6	6	11	11	1	46	48
Monroe	16,875	94		1			3	3	4	4	19	19	3	37	39
Montgomery	27,316	180					1	1	10	10	17	17	2	51	53
Morgan	18,000	123					4	4	7	7	10	10	1	32	34
Norton	8,167	44	1				1	1	5	5	15	15	3	17	18
Noble	22,656	169		1			1	1	8	8	6	6	1	39	41
Ohio	7,503	33					2	2	1	1	1	1	1	13	13
Orange	14,903	77					3	3	5	5	18	18	1	37	38
Owen	15,001	69					1	1	7	7	12	12	1	26	27
Parke	13,680	94	7				1	1	17	17	12	12	1	46	47
Perry	16,897	95					7	7	16	16	17	17	2	45	48

Ten Causes of Death by Counties—Continued.

COUNTIES.	Population, 1880.	Total Deaths from All Causes.	TEN CAUSES OF DEATH.										Total Deaths from these Causes.	Per Cent. to Total Mortality.
			Small-pox.	Diphtheria.	Scarlet Fever.	Whooping Cough.	Typhoid Fever.	Cerebro-Spinal Meningitis.	Pneumonia.	Bronchitis.	Consumption.	Casualty.†		
Pike.	16,383	29					1	2	7		7	1	28.57	
Porter.	17,227	144					7	3	12	2	16	3	32.65	
Posey.	20,557	25					1	1	4		1	3	44.00	
Pulaski.	9,351	143	1		7		11	3	11	2	26	3	45.45	
Putnam.	22,301	143												
Randolph.	26,425	128		1	2	1	7	3	16	1	12	7	38.28	
Ripley.	21,627	117					8	6	9	1	15	3	28.46	
Rush.	19,978	139		1	1		8	6	1		13	3	30.93	
Scott.	8,346	11					1	1	1		2	2	47.05	
Shelby.	25,257	118	2				1	1	9	3	23	3	40.63	
Spencer.	22,122	132		1		1	18	10	32	1	20	3	44.79	
Starke.	7,107	52					2	3	8	1	11	1	38.55	
Stephens.	33,175	122			2		9	4	10	1	13	4	30.32	
St. Joseph.	32,726	125					9		11		8	4	32.86	
Sullivan.	26,236	125												
Switzerland.	13,256	50				1	4	2	13	2	11	2	35.00	
Tippecanoe.	38,906	296				1	10	2	7		9	2	31.06	
Tipton.	14,367	95			1	2		2	1		6	2	34.73	
Union.	7,671	17		3	2			2	1		1	1	72.94	
Vanderburgh.	42,191	630	23	5		8	15	13	49	11	70	58	37.00	
Vermillion.	14,925	54					4	5	12	1	3	2	46.74	
Vigo.	47,678	363		4	1		3		21		18	11	34.24	
Warren.	27,431	131				1	2	1	13	2	14	3	43.15	
Washington.	13,497	11		1	3		3	1	13	4	7	3	50.96	
Warrick.	20,165	165						4	17		17	3	49.38	

Table X gives by State, and each county, total deaths from *all* causes. The deaths from each of the ten causes in each county. Also the per cent. of the mortality from each cause of death, to the total mortality in the several counties.

All such causes of death are in a great degree preventable. A study of the tables will, we think, show that these preventable diseases exist in a greater degree in the rural districts and scattered population than in those counties where the population is more concentrated; whereas, with proper attention and such care as Boards of Health exert, both by mandatory enforcement of proper rules and educational functions.

Scarcely any deaths should occur in these counties from the causes mentioned.

In this table there is included in the estimate of total mortality from all causes, 710 still-births. The estimated per cent. of mortality for the State from the ten specified causes to the total mortality is exclusive of Porter, Cass, Wells and Starke counties, the Health Officers of those counties having made no report.

We find the mortality from those ten causes to be 4,149—nearly one-half of the total deaths in the State, if we exclude still-births. This is a bad showing, even if we estimate that one-half of such deaths might be prevented. We also find that the death-rate for these ten causes to the total mortality in nine counties having the most concentrated population is below 40 per cent., while in twenty-nine counties, altogether agricultural, with population less concentrated, the death-rate exceeds 40 per cent. Such fact ought at once to settle the question as to the need of some means being used in the rural districts to prevent deaths from such preventable causes. If we consider separately each of these ten causes of death, we find that in the counties given to agriculture, and where the population is most scattered, the death-rate from nearly all these preventable causes exceed that which is found to exist in counties with population more concentrated.

The per cent. of deaths from Diphtheria in seven counties of scattered population, designated as (*a*), average 6.53 per cent.; in seven counties of concentrated population, designated as (*b*), it averaged 1.57 per cent. Deaths from whooping cough in seven counties (*a*) averages 3.59, in seven counties (*b*) 1.41.

ERRATA.

On page 38, lines 11, 12 and 13, should read as follows:

“Both by mandatory enforcement of proper rules and educational functions, scarcely any deaths should occur in these counties from the causes mentioned.”

Deaths from scarlet fever in seven counties (*a*) averaged 4.46 per cent.; in seven counties (*b*) 1.41 per cent.

Deaths from typhoid fever in seven counties (*a*) 3.20 per cent.; in seven counties (*b*) 3.20 per cent. Deaths from spotted fever in seven counties (*a*) average 4.11 per cent.; in seven counties (*b*) 1.71. Deaths from pneumonia and bronchitis (acute lung affections) in seven counties (*a*), 25.60 per cent.; in seven counties (*b*), 7.66 per cent. Deaths from consumption in seven counties (*a*) average 17.74 per cent.; in seven counties (*b*) 12.21 per cent. Deaths from casualties in seven counties (*a*) average 7.09; in seven counties (*b*), 4.75 per cent.

*If we examine table XII that gives deaths by occupation, we find that, as reported, about one-half of the deaths from these ten causes occurred among those we must class as farmers. In this classification we must place one-half of those returned as laborers, housekeepers, housewives, domestics, and those placed as not reported.

Out of the 228 deaths from casualties, 80 were classed as farmers; of the 840 deaths from pneumonia and bronchitis, 439 were of the class farmers; of the 340 deaths from typhoid fever, 169 were farmers. Of deaths by consumption, 334 were of the farmer class. This cause of death showed its greatest effect upon the female portion of the population, 810 females dying, to 531 males.

*In table XI is given the deaths from each of the ten causes, by ages, and the total number of deaths from each cause. We notice that 404 deaths occurred from these ten causes during the first year of life, a greater number than occurred in any other year. This preponderance in number is chiefly due to an increase of deaths from whooping cough, spinal meningitis, pneumonia and bronchitis. Dividing the ages into periods of ten years, we find the greatest mortality in the first period—1,100; the next greatest number of deaths is between the ages of 25 and 30—833.

No death from whooping cough occurs after the age of 18; 5 deaths from scarlet fever, 8 from diphtheria, and 39 from small-pox occurred after that age, while 107 deaths from whooping cough, 64 from scarlet fever, 153 from diphtheria, and 47 from small-pox occurred before the age of 18. Of the 480

*Table omitted here.

deaths from typhoid fever, the majority occurred between the ages of ten and 30; from this cause the deaths of males and females are about equal in number. Of deaths from spotted fever, there were 239; a majority (135) occurred before the age of 10 years. More deaths occurred from consumption than from any other of the ten causes (1,341), and next to this, pneumonia (1,094). Pneumonia and bronchitis, combined, show 1,286 deaths.

Of bronchitis, a majority of deaths (105) occurred before the age of five years. The greatest age at which death occurred was 107 years. Two returns at this age, one a male, the cause of death not being old age, but pneumonia, and one a female, death from old age. There have been 102 deaths returned and no ages given. Age is an important item in these statistics, and should be returned in all cases. Deaths from early old age generally have some additional reason for their appearance, and care should be taken in returning facts in such cases. Deaths of those under five years of age number 21.19 per cent. of the whole.

It can not fail to strike the attention that more deaths occur from whooping cough than from scarlet fever. This is thought to be rather a harmless disease, at least considered inevitable, and the sooner the child has it the better, no care is taken of the sufferer, acute disease of the lungs follows, and death is often the result. The people need to be educated upon this subject, and taught that proper care by parents and nurses will prevent a large proportion of deaths from this cause.

